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**The expert  
user club  
Newsletter**

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**The Expert  
User Club**



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66a Harold Street, GRIMSBY, South Humberside, DN32 7NQ.

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# Expertise newsletter

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## Computer clubs

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If you are a member of a computer club, please drop me a message sometime letting me know the name and address of the club secretary and what machines if any they mainly support. I hope to compile a list a computer clubs and make this available to anyone interested.

## Cor! Wars.

A new computer game for you to try.

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### Can you survive!!

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We have created a new multi-user game for you to compete with other user group members. The idea of the game is for you to produce a small program which will survive and attack other programs within its memory space. To win your program must be the last program left uncorrupted when two or more programs are allowed to run in the same memory space. We supply full instructions on how to play this challenging game, also S.I.M.O.N. which runs on the 64 to allow you to enter and test your masterpiece on.

Note this is not 6502 code or Basic, but a special simple language designed for COR! WARS. Even non programmers can pick it up, and it will probably help your understanding of computer languages.

When you are ready for the challenge simple send us a copy of your program and when we have collected a few together, we will run a knockout contest and award points according to your success rate.

Winning programs will be published in expertise with the authors name. We are even thinking of some prizes to give to winners.

To play this game you must have S.I.M.O.N and instruction manual. The full instructions will be published in the next issue of Expertise, but if you want advance details please send #1 for the manual, to get S.I.M.O.N. simply ask for it to be put onto any disks we are sending you. Please note we cannot put this program onto disks you send to us.



# Feedback to us

(most welcome).

- To get messages/cheats/comment added to our database and published then do one of the following.
- Make the comment on disk file using either our special program or just plain text. Then send disk to us.
  - By written details. Just send us a letter with any messages etc clearly marked and written, preferably with your membership number shown. Please note if you are sending something like adverts or messages ie not cheats then please enclose a new first class stamp to cover the costs of my nail varnish/broken nails in typing your query into the computer...If its LONG (urgh!) then I shall instruct my courier part (the dreaded J.A.C.K.I.E) to take action against you.
  - By bulletin board (real soon now honest. Ask for details).

J.A.C.K.I.E

## Normal mail address

If you wish to send anything to us from outside Great Britain or something larger than a letter then please use this address and put normal postage on it.

Expert user Group  
66a Harold Street  
Grimsby  
South Humberside  
England  
DN32 7NQ

## Disk owners.

A special program

Basically we send you a disk instead of a written news letter. This disk contains the news letter plus messages (upto 1000 messages). There is a special program provided that allows you to read messages easily. This program also allows to write or reply to messages which are stored back on disk. You then send this disk back to us and our friend-

## Readers survey

If you intend using the Disk based messaging system please do not use the Written survey from issue 13, but order the disk system as there is a survey on that disk that is easier for you to fill in, and it is also read automatically when you send that disk back to us.

ly computer J.A.C.K.I.E reads this info, fiddles with it and passes the replies etc back to the correct users. Currently there are about 5000 messages on the main disk system, so disks sent to you are built up on the day of sending by an automatic routine. This looks for replies to you, news-letter message etc and general messages, and writes as much as possible onto a disk. This means that each disk is unique. If you wish to have the disk sent instead of written news letter then there is no extra charge as your membership fee covers this, but you may find that you wish to get disks more frequently, in which case you can send 2.95 at anytime to get an up to date disk. Even as you are reading this extra items are being added to the main disk.

## Freepost address

If you are in England or Northern Ireland, then please send membership forms and money to the following address. Please note that the Street is NOT needed, that the post code is different to normal address.

Do not use this for anything larger than a letter size envelope.

Expert user Group  
Freepost  
Grimsby  
South Humberside  
DN32 7BR

## Back Issues of Expertise

At present there are no individual back issues available. However we are working of compiling the usefull information from all previous issues (before the move to grimsby) into a single booklet.

This booklet will be quite large and properly typeset etc. This means we will have to charge about #2.95 for it. Not sure of exact date of release but you can order it before hand if you wish for prompt delivery when available..Called Expert Archives issue 1.

## Book shop

The following books are now available from the user group, we hope to review some soon.

CODE	TITLE	AUTHOR	PRICE
0155	6502 Applications	Zaks	13.95
2799	6502 Ass Lang Prog 2nd Edition	Leventhal	19.95
1489	6502 Reference Guide	Tully	10.95
0060	Programming The 6502	Zaks	16.95
3114	Prog Ref Guide for PLUS 4	Merien & Meyer	20.45
2767	Anatomy 1571 Disk Drive	Ellinger	6.95
3651	Comm 128 Prog Ref Guide	Commodore Business Machines	22.95
3652	Comm 128 Subroutine Lib	Busch	15.45
3787	Comm 128 Tricks & Tips	Weliver Hornig Trap	12.95
2806	Commodore 128 Advanced Prog	Sinclair	5.95
3495	Commodore 128 Companion	Amot	9.95
1587	Commodore 64/128 Collection	Cowper	12.95
2867	Mapping the Commodore 128	Cowper	14.95
3658	Official Geos Prog Ref Guide	Berkley Software	18.45
1767	The Anatomy of the Comm 128	Gerits Scieb & Thr	6.95
3650	The Big Tip Book for Comm128/64	Annaloro & Kersey	15.45
3300	Adv Comm 64 BASIC Revealed	R franklin & C Graham	9.95
1904	Anatomy 1541 Disk Drive 2nd Ed	Englisich & Szczepano	9.95
2768	Child's Guide to C64	Dewhurst	4.50
3653	Comm 64 Survival Manual	Rosch	11.95
0657	Comm 64 Programmers Ref Guide	Commodore	12.95
1242	Comm64 Programmers Route Map	Hill	3.95
3219	Commodore 64 prog ref Guide	Commodore	8.95
0916	Easy Guide To Your Comm64	Kascmer	4.95
3482	Programming the C64 Revised	Raeto West	14.90
3237	Watsons Notes C64 Vol 2	Kedem & Kalsky	2.95
3238	Watsons Notes C64 Vol 3	Kedem & Kalsky	2.95
3239	Watsons Notes C64 Vol 4	Kedem & Kalsky	2.95
3240	Watsons Notes C64 Vol 5	Kedem & Kalsky	3.95
8898	Programming the Expert	Sid	2.95

Will you please add #1.50 postage and packing to all orders to cover our costs unless otherwise stated. The book prices above are the standard retail prices so we have to charge for posting and packing to stop it draining user group funds.



## UPC1 and Expert 1 Owners

We have a special Group release of software for the above cartridges for owners of these cartridges. This software is identical to Trilogics version 3.1 but is designed for use only with the above cartridges. Note this is only available to group members at the special price of #3.95 (Disk only).

## Assemblers v Monitors

You may be unaware of the difference between an assembler used in the typical monitor (ie like the Expert assembler), and a true two pass symbolic assembler.

The keyword is 'symbolic', which means that you can use names instead of values. Eg say you want to do a LDA instruction from a memory location that you are using to store how many lives a user has left, you could do:-

```
LDA      $C000
or
LDA      LIVESSTORE

Where at some point you have said that LIVESSTORE is $C000. Wow you say, so what!. Well in a few bytes of code there is no advantage, but when you have hundreds or thousands of lines of code, then symbols perform two jobs. Firstly they can and should make the code more readable. It is easier at a glance to see what LIVESSTORE might be for. Secondly we take in the two pass aspect of assemblers which most sybolic assemblers are. Imagine th following code.
```

PRINTCHAR	= \$E716	
	EQU	\$C000
	LDX	#500
LOOP	LDA	MESSAGE,X
	BEQ	DONE
	JSR	PRINTCHAR
	INX	
	BNE	LOOP
DONE	RTS	
MESSAGE	.BYTE "Hello world", \$0D, \$00	

I wont describe the code too much but basically as the assembler starts assembling the code it comes to the label 'MESSAGE' used before it knows where it is. This is usual in real code so no attempt is made to generate the object code on the first pass as it cannot be done. What it does it just create the symbol 'MESSAGE' in its symbol table, but assigns no value to it. Then when it hits the actual place where 'MESSAGE' is defined it stores the value of the symbol. At the end of pass one, it should have encountered all used symbols and know a value for them. This allows it on the next pass to create the actual object code.

Note. The term source code refers to that text which you actually write. Object code is the binary data produced by the assembler from your source code.

### THE EXPERT USER CLUB NEWSLETTER ISSUE NO 13.

Welcome to this months issue of Expertise. Coming up in this months issue we've an assortment of different things and news for you to get to grips with.

#### PROGRAM SUBMISSIONS.

So you've written a program, or you've got a few cheats to send in have you, well if you have could you please, please try to follow the following format.

1) If you are sending in for software, membership or resubscription, then please send these enquiries to the normal user club address.

2) If on the other hand you are sending in enquiries, cheats or programs which are for my attention then send these to the same address but please enclose them on a separate piece of paper. This is because the secretary can then forward your enquiries and cheats etc, on to me, and it will give me a bit more time between newsletters to try them, and include them in the mag. Oh yes also please at the top of any submission or enquiry which you think requires my attention put the words FOR THE BOFFIN, and your name address and membership number (some people do forget!).

#### Utility disks

Don't forget Trilogic's utility disks for hints and cheats plus help with transferring multi part tape games to disk. Prices 5.95 for a new disk, or if you already have a utility disk you can return it to Trilogic with 2.00 for an update, but please note it must be the original utility disk. Club members 50p discount if you order through the club, but don't forget to include your membership number. Trilogic have told us that the utility disk should be updated between every 2 - 3 weeks. By the way don't forget about the deal we've negotiated with Trilogic. If anyone out there writes multi-part tape - disk transfer routines and sends them into the EUC and we use them, then you will receive 15 blank disks + £10.00.

Winners names will be printed in the following newsletter, so get writing and sending them in and if you see your name in the following newsletter, then you know your prize is on its way to you. If we get more than one entrant for the same game then I'll either decide on merit (say if one was smaller or provided better options) or I'll draw the winner from a hat. Please supply a working copy of your routine on disk or tape, and if you wish for it to be returned include 50p p.p U.K. anywhere else including Europe 2.00. and don't forget your name, address and membership number.

#### MEMBERSHIP DETAILS AND BACK ISSUES

Membership costs £5.75 for a trial 6 months (overseas incl Europe add £2.00 to cover airmail postage). Or £9 - for an annual subscription. Existing members who are receiving Expertise on the trial six month period are reminded that after their six months are up you should then send in an annual subscription fee. Expertise is sent either monthly or bi-monthly for double issues, but please note that the mag itself is done completely by volunteers who are both unpaid and not professionals, but we shall in future be endeavoring to make sure its out monthly.

#### SPECIAL NOTICE SPECIAL NOTICE

Due to additional running costs recieved by us at the user club will you please note that all future membership fees will now be at the new rate as stated above. The main reasons why we are having to increase the membership fee is mainly due to the increase prices we have recieved from our printers and additional costs like envelopes and stationery. We must apologise for this but it will not affect any outstanding issues due on membership already recieved.



### BACK ISSUES

These are available at 65p each. The first was OCTOBER '86. But JAN/FEB and MAR/APR are double issues so they cost 1.30

### HELP US TO HELP YOU

Have you bought a new piece of software or hardware (not games please) and you think it's either brilliant or garbage. Well why not write in and tell us about it so that we can pass it on to other readers, at least hopefully we should get a fair account of what's worth buying and what's not.

### TRILOGICS NEW ADDRESS AND TELEPHONE NUMBER.

In case you don't know Trilogic have moved to new premises and have a new telephone number. (see below)

TRILOGIC  
UNIT 1  
253 NEW WORKS ROAD  
LOHMORR  
BRADFORD  
WEST YORKSHIRE  
BD12 0QP  
ENGLAND.  
Telephone (0274 691115)

### HELP HELP HELP HELP HELP HELP HELP HELP HELP HELP

Please keep your hints tips and cheats coming in as we need some new ones to publish, as the cheat page is a very popular feature of the mag and if we run out of cheats it might be a bit annoying to have to repeat the old ones. Talking of the old cheats this issue will contain some of the old cheats for the benefit of our new members.

### A SECTION FOR OUR NEW MEMBERS

Congratulations on finally smashing your Freeze Frames and Action Replay cartridges to bits and purchasing an Expert.

Exactly what the Expert User Club does in this publication is to pass on information on how to get the most from your Expert and to try to answer any enquiries you might have on any subject. Also we try to keep you informed as much as possible with any other news and developments which we think could be of interest to you.

### COMMODORE RELEASE NEW 64

No I've not finally gone insane or am late realising its the 64C, but according to what was published in Commodore Disk User November/December issue, Commodore are due to release a new 64 about any time now in West Germany, and according to them the only things it has in common with the original 64 are the C.I.A. chips and the character rom.

So if any of our readers in West Germany see one of these new 64s or owns one please write to me (The Boffin) and let us all know what you think about it.

### AMIGA OWNERS

As promised in the last issue the price for Trilogics Print link is £29.95, and not £39.95 as advertised. Incase you

didn't see the review what Printlink does is to allow you to use any standard serial printer which works on the 64/128 with the Amiga using the 64/128 as a printer buffer, and so does not tie up the Amiga whilst you are printing.

### EPROMS AND EPROM PROGRAMMERS

Considering all the popular press this subject has been receiving lately I thought it would be a good time to give you about my opinion on the subject.

Firstly, let me talk very frankly about one company's Eprom programmer and then compare it with Trilogics. Recently a friend of mine wanted to write a new Kernel for the 64, and, knowing that when it was finished he would have to program an eprom he decided to look through his computer mags and see who was selling one. Without mentioning the company involved (but they do sell Action Replay) he decided to order their programmer. When it arrives he peddles down to his local electronic component stockist to buy a few 8k eproms. Great he thought and then tried to program one. Well it was problem time, as this particular type of eprom would keep showing errors when it was programmed or tested.

As it turned out, the eproms themselves were not faulty but the eprom programmer could not program this particular manufacturers type. So being in a bit of a dilemma he came to see me. We then tried to program the eproms using an eprom programmer I had purchased from Trilogic about six months ago which it programmed on the first attempt. You see having spoken to Trilogics electronics wiz Kid Ian, he told me that the eprom programmer which they sell is an extremely powerful one which is apparently made in Holland and is a lot more reliable.

So if you are considering buying an eprom programmer I would be careful which one you choose as there is an awful lot of rubbish being circulated at the moment. Remember the saying, 'you only get what you pay for'.

Considering the one my friend purchased cost £40.00 and I paid £75.00 for mine I suppose what I am saying goes to prove the point. Another nice thing with the one I purchased is that it is nicely protected in a cartridge case and as such could not be easily damaged if say you accidentally dropped it, or the dog started to chew it up!

### OUR FIRST READERS SURVEY

Enclosed within this issue of Expertise you will find a questionnaire for you to fill in and return. The reason I am doing this is so I can find out exactly what you wish to see in the mag and also to help us see what additional things can be implemented. Once I know if there is anything additional for example you would like to see it gives us a bit of insight into your requirements.

If you find you haven't enough room on the questionnaire for your answers or you have any other comments on things you would like to see included then please write them on a separate piece of paper and attach it to the questionnaire.

Please try to return the questionnaire by March 31st 1986 so that I can examine the results and let you know the outcome in a future issue.



## MACHINE CODE FOR IDIOTS TIME

If you can remember I said in last months issue that I would show you how to move blocks of memory from one place to another. Considering moving memory look below at the shortest possible routine you could use.

Example 1

```
LDA $C000
STA $C020
RTS
```

All this does is to load the accumulator with the contents of memory location \$C000 and then store the contents of the accumulator at \$C020.

Now lets say you wanted to move 1K of code from one location to another, the above example would not very good would it, because you would need 4K of instructions to move 1K of code.

So to make things easier look at the next example which moves 255 bytes of code.

```
      LDX #$00
LOOP  LDA $C000,X
      STA $0400,X
      INX
      CPX #$FF
      BNE $C002 (loop)
      RTS
```

Now when this routine is called the X register is first loaded with 00, this is because we are going to use the X register as a counter. Next we load the accumulator with the contents of the starting location we wish to move plus the contents contained within the X register, the contents of the X register are not added to the contents of the memory location but are added to the memory location address. Thus if X were to contain 20 the routine would start by loading A with the contents of \$C000 plus X which would equal \$C020 and then store this data at \$0400 plus X (\$0420).

This is a full explanation of what happens, X is first set to zero, then A is loaded with the contents of \$C000 plus X which equal \$C000, then A is stored at \$0400 plus X (\$0400). Next you increment the contents of the X register by one ( X now contains 1 ) and the following instruction CPX #\$FF stands for compare the contents of the X register against \$FF (255), but X contains only one so the next instruction BNE causes the microprocess to go back to address \$C002 and continue within this loop until the X register contains \$FF.

On the X register containing \$FF (255 which is the number of bytes we are moving) the CPX #\$FF instruction becomes true which then sets the Z flag in the microprocessors status register.

1. The Z flag stands for the zero flag. Now the BNE instruction which stands for branch on result not equal to zero checks the zero flag and this time it finds that it is set so it does not take the jump back to \$C002 but allows the RTS to be performed.

This type of addressing mode is called absolute indexed addressing simply because we are using an indexed register.

Now that you've the general ideal lets look at a simple improvement and then I'll show you yet another way of moving code. Lets say you want to move 4 lots of 255 bytes of code, you can still do this as with the above example by simple doing the following.

```
      LDX #$00
LOOP  LDA $C000,X
      STA $0400,X
      LDA $C100,X
      STA $0500,X
      LDA $C200,X
      STA $0600,X
      LDA $C300,X
      STA $0700,X
      INX
      CPX #$FF
      BNE $C002 (loop)
      RTS
```

Now this example does exactly the same as the previous one but could end up very hungry on the amount of room the routine takes up in memory. In the following example you have a general purpose version of a machine language block move routine which will move either very small or very large amounts of code from one place to another.

C000 A9 00	LDA #\$00	Low byte of starting block
C002 85 FA	STA \$FA	
C004 A9 E0	LDA #\$E0	High byte of starting block
C006 A5 FB	STA \$FB	
C008 A9 00	LDA #\$00	Low byte of new location
C00A 85 FC	STA \$FC	
C00C A9 E0	LDA #\$E0	High byte of new location
C00E 85 FD	STA \$FD	
C010 A0 00	LDY #\$00	
C012 B1 FA	LDA (\$FA),Y	
C014 91 FC	STA (\$FC),Y	
C016 C8	INY	
C017 D0 F9	BNE \$C012	
C019 E6 FB	INC \$FB	
C01B E6 FD	INC \$FD	
C01D A5 FD	LDA \$FD	
C01F C9 A0	CHP \$A0	Compare the block end address.
C021 D0 EF	BNE \$C012	
C023 60	RTS	

Firstly with this routine I want to draw your attention to eight instructions starting from \$C000 to \$C00E. The first pair loads the accumulator with \$00 and stores it at \$FA, then the next instruction loads and stores \$E0 to \$FB, this continues until \$C00E.

If you look carefully at the text next to the instructions you will see that it says Low byte, High byte, ect. By looking at the low byte high byte format you can see the address \$E000 and \$8000, this because in this example I am moving an 8K block of code from \$E000 to \$FFFF to \$8000.

The next instructions need to be understood in a different way, firstly we are this time using the Y register as a counter instead of the X register as in the other examples. So before I go any further let me explain the block of code from \$C010 to \$C017 because this uses a different type of addressing mode than that dealt with earlier.

Take a close look at the instructions which are contained within brackets, this type of instruction mode is called indirect indexed addressing and is very powerful. In our



example routine at \$C012 you see the instruction LDA (\$FA),Y. This instruction is understood as follows, LDA (\$FA),Y, will identify a memory address from the contents of Zero Page locations \$00FA (lower order byte) and \$00FB (higher order byte) then modify that address by adding the contents of Index register Y, e.g. the contents of location \$00FA we have set to \$00 and those of location \$00FB we have set to \$E0 giving an address of \$E000. If the contents of Y were say \$21 and not \$00 then the required memory location would be \$E021 plus the value of Y which equals \$E021. When using this type of addressing the processor does all the work of checking the two byte addresses for us when it is contained within the zero page. (Zero page addressing refers to the first 255 bytes of ram contained within your computer).

O.K. so when we first call this routine and the 64 reaches address \$C010 this is exactly what happens, the Y register is set to \$00. Then the accumulator is loaded with the contents of what location \$FA and \$FB point to (\$E000) and the value of Y is added to the address (\$E000 + value of Y (Y = 0) give a result of \$E000. Then the value contained within A is stored at the address pointed at by \$FC and \$FD (\$6000) plus the value of Y again. Next Y is incremented (Y = 1) then as explained earlier BNE \$C012 checks to see if the zero flag is set and if it is not jump back to C012, now when Y contains \$00 again after being incremented 255 times the zero flag is set which then allows you to increment \$FB and \$FD by 1, then you check to see if \$FD contains \$A0 (which is the high byte of where the move routine ends) and seeing at this time FD contains \$81 the BNE causes the routine to execute again until \$FD contains \$A0 which then sets the zero flag and the routine ends with the RTS instruction.

If you were to change the value in \$C01F to CMP #\$93 for example, when the contents of \$FD were to equal \$93 you would have moved code from \$E000 to \$F2FF to \$6000 to \$92FF.

Now type in the above listing at \$C000 and try it for your self.

Another decent book which I recommend you to get hold of is called the 6502 Reference Guide by Alan Tully and is available from Melbourne House publications.

#### HARDWARE REVIEWS SECTION

Guess what I went and bought at the PCW show in London? A copy of Datel's Burst Nibbler 1.7. Exactly what Burst Nibbler 1.7. does is this. Supplied with the Burst Nibbler 1.7. disk is a parallel lead which requires fitting into the standard 1541 to allow the Burst Nibbler software to read and write data in parallel instead of serial. If you already own a fast dos system like Phantom, Dolphin, then you do not need to purchase the additional lead.

Having got it home I decided to try it on the disk version of Gunship which I was told by Datel it would copy. Having tried numerous times I gave up without being successful. Then a few days ago I checked my drives alignment using a special alignment disk and an oscilloscope, which proved my disk was just a very very tiny fraction out. So having realigned my drive, setting up the drive stop, I decided to give Gunship another try, and what do you know success. You see it appears that with Burst Nibbler it is reading the data off the disk in pure GCR (Group Coded Recording) format, and as such ignores things like disk errors. The trouble was that my drive was only the slightest bit out and as such Burst Nibbler was misreading the information, even though I could load Gunship perfectly everytime. So if you have a parallel drive or you want to own a very powerful disk copier I would recommend that you purchase this one.

#### PROBLEMS

Paul Hewitt from Ramsgate in Kent writes and asks how is it possible to find a games nestant address. Well Paul if I knew the answer to that on every game it would certainly make life easier for all us hacks now would't it.

You see sometimes it possible to find the games start address by stopping the tape when it loading. Then disassembling the code to see if you can find the JMP instruction to the beginning of the game.

Mr I Penny has written saying he has been having problem transferring World Games to disk which when it loads back the slalom skiing file will not load but the cassette motor activates.

This apparently is because he has a copy of the game which is on a double cassette and not a single side for which the transfer routine was written.

Well Mr Penny the only thing I can suggest is that you try this when the first file of slalom skiing loads stop the 64 with the Expert and enter the following command.  
K \* FFBA return.

If you find that the K command locates a usage for this kernel routine then disassemble just above it and look at the value that is in the X register. If the X register is containing a 1 then change it to an 8 to set this loading device from tape to disk. I am presuming that you might know a little about machine code and if you don't then I strongly suggest you ask someone who does taking this information along with you.

If anyone else as had this problem with world games and cured it (because I can't get hold of a copy on two sides) then please write in and let me know so I can pass it on to Mr Penny.

David Jenson from Warrington wants to know why we are no longer having cheats published by ZZAP 64. The answer is quite simply this.

Once upon a time in a Galaxy far far away (I heard these words somewhere before!) was a magazine called ZZAP, and in another part of a not to distant Galaxy was a little group of people trying very hard to help ZZAP. By having them publish helpful hints and cheats for its readers to use in its cheat section. BUT THERE WAS AN EVIL EMPORER who runs a software house called USELESS GOLD and he threatened the people of ZZAP with a powerful ultimatum which was 'you either stop publishing the Expert Cheats page or we will withdraw our advertising'.

Well the people of ZZAP being only of inferior intellect and resourcefulness succumbed to his threat and refused to except any future cheats for the Expert cartridge. This only goes to show that somebody needs to find Luke Skywalker and get him to use his force on this ridiculous software Emperor, i.e. a laser bolt up the ##3\*.

#### YET ANOTHER OPERATING SYSTEM FOR THE EXPERT

Yes the guys at Trilogic has now finished another operating sytem just for the novice users to use. Its called EASY FREEZE and consists of just the basic routines without the monitor. This version of the operating sytem is designed primarily for use by people who are not at all schooled in machine code or who find the Expert difficult to use.



## VERSION 3.1 TESTED.

The new operating system 3.1 disk from Trilogic is listed below for you to see what you get on the disk. Before I go on to tell you about the improvements and some of the additional features please take note that I will be concentrating on disk user programs.

```
0 "EXPERT 03.1 DISK" AT 24
10 "MENU" PRG
0 " " PRG
35 "PART1 TO DISK" PRG
34 "PART2 TO DISK" PRG
35 "PART3 TO DISK" PRG
35 "PART4 TO DISK" PRG
0 " " PRG
34 "PART1 TO TAPE" PRG
33 "PART2 TO TAPE" PRG
35 "PART3 TO TAPE" PRG
0 " " PRG
34 "EXPERT EXPRESS" PRG
0 " " PRG
24 "SPRITE DISK EDIT" PRG
27 "SPRITE TAPE EDIT" PRG
0 " " PRG
11 "DISK TO TAPE" PRG
0 " " PRG
39 "NO BLOCKS BOOT" PRG
8 "BOOT" PRG
24 "BOOT 1570/1 ONLY" PRG
0 " " PRG
7 "CONVERSIONS" PRG
5 "KOALA CONVERSION" PRG
8 "KOALA COMPACTOR" PRG
6 "KOALA FLIP" PRG
7 "PRINTSHOP/KOALA" PRG
7 "DOODLE/KOALA" PRG
6 "DOODLE/PRINTSHOP" PRG
5 "PRINTSHOP/DOODLE" PRG
7 "PRINTSHOP FLIP" PRG
0 " " PRG
60 "ADVANCED MONITOR" PRG
1 " " PRG
1 " THE EXPERT " PRG
1 " ASSOCIATED " PRG
1 " HARDWARE AND " PRG
1 " SOFTWARE ARE " PRG
1 " COPYRIGHT " PRG
1 " TRILOGIC 1983 " PRG
1 " " PRG
23 "EXPERT INTRO" PRG
34 "SELF SAVER TAPE" PRG
42 BLOCKS FREE.
```

READY.

The first thing to notice is that the main Expert files are entitled Part to whatever system you are using. The main changes involved in the new operating system is that the cruncher and decompacter have been improved. Decompacting now only takes on average about 2 to 3 seconds and the game is then up and running.

This is what the disk now contains:-

PART 1 TO DISK - PROGRAM PARALYSER AND BACK-UP GENERATOR.  
PART 2 TO DISK - SPRITE EXTRACTOR AND SAVER ( TO DISK ).  
PART 3 TO DISK - SPRITE KILLER, MONITOR PRINTOUT, JOYSTICK PORT SWAP.  
PART 4 TO DISK - HIRES SCREEN GRABBER AND SAVER ( TO DISK ).

EXPERT EXPRESS - DISK TURBO AND HIRES DUMP.

PART 1 TO TAPE - AS ABOVE EXCEPT FOR TAPE USERS.  
PART 2 TO TAPE - " "  
PART 3 TO TAPE - " "

SPRITE DISK EDIT - TO EDIT SAVED SPRITES FROM DISK.  
SPRITE TAPE EDIT - TO EDIT SAVED SPRITES FROM TAPE.

DISK TO TAPE - TO BACKUP A TAPE VERSION OF A DISK SAVED PROGRAM.

NO BLOCKS BOOT - PUTS A FAST LOADING BOOT PROGRAM ON TO YOUR DISKS WITHOUT USING ANY BLOCKS.

BOOT - FAST LOADING BOOT PROGRAM FOR USE WITH ENHANCER DRIVES BOOT 1570/1 ONLY - FOR THESE TWO DRIVES.

CONVERSIONS -  
KOALA CONVERSION -  
KOALA COMPACTOR -  
KOALA FLIP -  
PRINTSHOP/KOALA -  
DOODLE/KOALA -  
DOODLE/PRINTSHOP -  
PRINTSHOP/DOODLE -  
PRINTSHOP FLIP -

THE ABOVE ARE AIDS FOR THE GRAPHIC USER.

ADVANCED MONITOR - FOR THE EXPERIENCED PROGRAMMER.

EXPERT INTRO - SELF EXPLANATORY.

SELF SAVER TO TAPE - LETS YOU BACK UP A TAPE BASED PROGRAM STARTING AT 0801 TO FFFF STRAIGHT TO TAPE.

Here are some of the new features included on the current operating system. Take the part 3 operating system for example, a lot of people write in to me wanting to know how to give themselves infinite lives on a game.

So now with this version of the operating system all you do is to wait until you *two* lives and stop the game. Then just type I return, when the changes have been made restart the game in the usual way to check if it as worked. You can then if you wish restart the game and save in the normal manner.

## THE SELF SAVER OPERATING SYSTEM.

This operating system enables you to save a program without compacting it. It save in a similar way as a basic SAVE name. It can be used to fast save a basic program or any program that resides from 0801. Therefore you could if you wish load an expert file in normally and then following the instructions below save a copy to tape.

## ERI INSTRUCTIONS.

- 1) Program the Expert with the self saver file as usual.
- 2) Type N to return to basic.
- 3) Load in the program to be backed up. But do not run.
- 4) Press restore to activate.
- 5) Insert a blank cassette into the datasette & type Y return
- 6) When the back-up is finished the monitor will return.



## PEN PALS PAGE

We're beginning to receive a few names for the pen pals page so keep them coming in. Please include your age and any other interests that you might have.

Robert Robinson, 30 Buxted Road, Southdene Kirkby, Liverpool, Merseyside, L32 6SQ, England.

Gary Fawcett, P.O. Box 21243, Henderson, Auckland 8, New Zealand.

Derek Whayman, 100 Long Ley, Harlow, Essex, England.

Peter Williams, Clun Road Bakery, Craven Arms, Shropshire, SY7 9QS, England.

Shul, 49 Onslow Gardens, South Woodford, London, E18 1ND, England.

Bryan P Cander, 9 Tate Close, Wistow, Nr Selby, YO8 0YH, England Age 20. Interests:- Computers ( owns a C128 ), Music i.e Madonna, Magnum, and home brewed cider.

Mr and Mrs G.W. Ferguson, 522 Kottthoff St, Lavington, N.S.W. 2641, Australia. ( C64 ) Since Christmas would like to get in touch with other Australian users.

Soapy Age 17, 307 South Eldon St, South Shields, Tyne & Wear, NE33 5SX.

Brett Cooper age 19, 128 Angyle Street, Hawera, New Zealand is a student at university and would like to contact other Expert users.

Dennis Fry, Aged 17, R.M.B. Hoskington, N.S.W. 2621, Australia owns a 64 and an Amiga A500. Interested in helping to teach machine code on the 64 like sprite routines and raster interrupts. Also Dennis if you want books on 68000 m/code I can only recommend the one I use which is Georges Computer Bookshop, Park Street, Bristol, England.

## LATE NEWS.

Trilogic have asked the EUC if we could pass on this additional information about the CBM 1901 monitor conversion service which they do. Inncase you have'nt heard or seen the advertisements in the computer mags Trilogic can convert your 1901 monitor so that it can display the full 4096 colours of the Amiga without fuzziness or wavering by fitting a 21 pin scant socket to it and a special lead from the Amigas 23 pin socket to the 1901. The original inputs are also retained.

Price £29.95

Trilogic can also collect and deliver your monitor for an additional £12.00 each way via a courier. (Seems like a good deal to me, at least you won't have to wait up to 5 days each way delivery time from the post office.)

But please ring them first about conversions especially if you want your monitor picked up and delivered. Also Trilogic do a range of different leads for TV monitors at between £10.00 to £14.95 for lots of different makes, again ring them to see if your model is covered. There number is:- ( 0274 691115 ).

## Cheats Cheats Cheats Cheats Cheats

Heres a few cheats past and present.

Bubble Bobble.

Getting fed up with not being able to reach the final screen then fret no more, I've come to the rescue. First load and stop game in the usual way then alter 0A0A to read 20 39 01.

Now using the A for assemble command enter this code at the \$0139.

```
A 0139 LDA $DC01
013C AND #$80
013E BNE $0144
0140 LDA #$01
0142 STA $21
0144 JSR $7E50
0147 RTS
```

Now all you need to do is to restart the game with the R command and when you wish to go to the next screen simply press the stop key.

## ACE 2

We recieved a letter from Mr B Carter, Govseimon, wanting to know how to transfer the tape version to disk. Well at the moment I have'nt even seen a copy of the game, but I do know that on the latest version of the utility disk a routine exists which allows you to back it up.

## WHOOOPS !

A cheat published in issue 8/11 from Rick Astley in Cineceter was apparently wrong. ( Naughty boy I'll smack your wrists the next time ! ).

The correct cheat for Hunchback should be F 57F9 57FB EA. Here are a few more from Rick to keep you going.

MONTY ON THE RUN	.F 2526 2528 EA
(Even Easier Monty)	.F 0C0E 0C10 EA
MANIC MINER	.F 40BB 40BD EA
GHOST & GOBLINS	.F 0936 0938 EA
HENRY'S HOUSE	.F 0FDF 0FE1 EA
RAMBO	.F 0C8F 0C10 EA

## SLAP FIGHT

Load and run game in the normal way, then stop it on the title screen. Change the contents of 0B3F to any number from 00 to FF for the number of lives. And if you change 27FF to AD you will have infinite fighters.

## MOT055.

Here's a cheat everyone can use and you don't even need the Expert for it. On the opening screen type the word DELBOY and press return, this will activate the games cheatmode. Thanks to Grenlin and Delboy for this one.

## SOLOMONS KEY.

Infinite lives.  
Load and run game, then stop in the normal way, now fill 0BA5 and 0BA6 EA.  
If you want to change the level you are on then using the I command enter I 001C 001C, then die, and then you will be on the next level.



BLAZER.  
Infinite lives. Using the F Command enter F 1B0C 1B0E EA.

-----  
Here is a wealth of cheats from one of our fanatical  
cheaters in Australia. Thanks very much for these cheats to  
J. Theunissen.

#### AVENGER.

.F 1912 1914 EA  
.F 192C 192E EA  
.F 194C 194E EA

Then return for unlimited lives.

#### ANTARIAD.

.F A888 A889 EA  
for infinite stamina.  
.F A894 A895 EA  
for armour protection then return.

#### ARCANA.

.F 3293 3295 EA  
.F 3299 329B EA  
.F 329F 32A1 EA for infinite energy.

.F 6F87 6F89 EA  
.F 6F8D 6F8F EA  
.F 6F93 6F95 EA for infinite lives.

#### BUGBLASTER.

.F 4948 4948 EA for infinite lives.  
.F 4820 4820 00 so only the cetipede can kill you.

#### BOMB JACK.

.F 163D 163F EA to kill sprite collision.

#### GHOSTS 'N' GOBLINS

.F 0A42 0A42 1A for smart bomb weapon.

#### BREAK THRU.

.F 19CC 19CE EA. for unlimited cars.

#### GAUNTLET.

.F BDED BDED 60 to stop attacks.  
.F 6F71 6F71 60 to stop being killed.

#### ICUPS.

.F 093D 093E EA for infinite lives.

-----  
From Graham Smith and Matthew Butler in Abergele N Wales.

They say that the Mega Apocaypse cheat didn't work so here  
is there alternative. Cheers lads.

#### MEGA APOCALYPSE.

When you reach the highscore table stop the game.

.F 7EA1 7EA3 EA for infinite lives on player one.  
.F 7EFD 7EFF EA for infinite lives on player two.

Then change the stack pointer to 05 and restart, but turn the  
Expert off pretty quickly when the game restarts.

## Jokes

I would like to see some computer related cartoons or jokes in this Journal, if you have any original work then Please Please send it.

J.A.C.K.I.E.

## Programming the Expert/UPC cartridge

We are producing a booklet on how to program the Expert or UPC cartridge. This booklet describes in detail how the hardware of cartridge works along with in depth descriptions of how the software works. This knowledge will allow you to modify the code or write new cartridge resident programs. Even if you are not a 6502 machine code programmer you might be interested in some of the problems in Freezing Programs and then restarting them without appearing to occupy any machine memory.

Written by the author of the expert software and designer of expert hardware we are able to offer this booklet at a special price to group members of only #2.95. Please order as Book code 8898.

J.A.C.K.I.E

## Complaints..Apologies.

Some of this news letter has been produced by the old group secretary on an MPS803 printer (Double Ugh!!). I personally apologise for this but when I took over as group secretary I inherited a few hundred photo copies, and instead of throwing them away (which I would have loved to), I thought I had better conserve group funds so you got them..

You will have noticed that the printing is now a bit better. As I master this program I hope it to improve visibly, all I have to do now is try and improve the content.

If there is anything about this newsletter you would like to see improved or changed Please tell me, I really am interested in your comments, even the bad ones. Also I get cold here now I have got rid of my C64 power supply, so need something to burn to warm me up.

J.A.C.K.I.E.

## Book borrowing

If you are interested in borrowing any of the books in the book list please contact me as I may be able to arrange this. I am unsure how to run this side of the group but a thought is to ask for a deposit of the value of the book which is refundable on return in good condition of the book minus the cost of our postage to you. ie all it will cost you is postage both ways. You would be encouraged to write a review of the book so that other group members can read the review etc before purchase.

J.A.C.K.I.E



## A few notes from the author of the Expert Software on Assemblers.

I started using an assembler called Mikro, this was a cartridge based product and being as I only had a tape deck it was a blessing to use. However the machine code monitor on it was pretty poor so with the help of a friend we tagged Zoom machine code monitor onto it in place of the original. We used this combination for quite a while and with it wrote quite a few utilities. I then purchased Machine Lightening from Ocean and was so impressed with this system that I converted most of my favourite routines from Mikro to M.L. format. This was used for the first versions of the Expert code and used right upto version 2.7. John Twiddy took over the source code then and made lots of nice improvements upto version 2.9 again using M.L..

I was then asked to start work on a new version of the code. After battling for weeks with M.L. and not getting too far because the source code was so big it had to be split into 2 parts and assembled from disk. The whole cycle of Edit/Assemble/Test was very slow.

I bought a program called PDS, this program runs on an IBM clone computer and allows me to edit 250k of source in memory using a nice friendly editor. Unlimited size can be assembled with disk include files, which from a hard disk drive are quite fast. The assembler is also fast it typically assembles the whole source code in about 9 seconds. A cable connects from the IBM clone to the Commodore 64 so I can make a change to the source and reassemble and have it running in the 64 in about 15 seconds, great for someone like me who writes direct into the machine without much paper work beforehand. by the way, before you all rush out and buy this program, I ought to warn you that the program cost about #630 and the machine to run it on about #800.

So I started writing the next version of Expert code. This was to be a super version, all singing and dancing. To achieve this using just 8k ram available in the cartridge I devised a method to relocate blocks in memory using various disk overlay schemes, the

idea was to fit into the 8k ram only what was required at that time, and to load other parts of code when needed.

Anyway to cut a long story short, the code got bigger and bigger and bigger, eventually reaching the 250k limit for residency in the new PDS system. So far about 3 or 4 months had passed, Trilogic were getting a bit annoyed at me as I had promised them the code a bit sooner. I showed them the code so far and we agreed that it was not what was required.

## Being pig sick.

I was what you called a bit pissed off (and that is being polite). I had worked very hard for months on that piece of code. What was I to do?? There seemed only one thing. As I was in Bradford I went and had a nice Indian Curry. I scrapped the code I was working on and starting that night working all night from the original 2.9 code I had most of the tape routines patched in by the next morning, and continuing working all that day got quiet a lot of the extra bits of code into the next version. Within about 3 days version 3.1 was ready for release, so I went back home to my home town and prove to my wife and kids that I did exist, leaving Graham at Trilogic to spend a couple of days correcting a couple of problems ready for version 3.1 release.

The other version of code that I slugged my heart out on for all that time remains untouched. One day I will try and get it finished, but remember that I refer to a programmers day so please dont ask when!!

# New User group secretary

### Dear user group member

This is Jackie, your new secretary at the keys. My friends and I have decided to take over the running of your user group to try and give you more of what you want. We are now all super-computerized, so we have something to blame if you get sent 10,000 copies of the news letter, or none at all. But seriously we will send something (nice!) to everyone at LEAST once per month. Every time we send you something it will have a date on it, so if you dont hear anything from us for say 5 weeks then please get in touch with us STRAIGHT away so we can threaten the computer with power loss, or a corrupted memory. Just to confuse you we will call this computer J.A.C.K.I.E which possibly stands for Joint Arithmetic Calculator and Kinetic Input Evaluator, the idea is that you wont know who to blame for the things that might (woot) go wrong. This computer will remember such details about you as your.

Date of Birth	(How can we send you a birthday present without it?)
Sex	(No rude comments)
Name and Address	(Obvious)
Amount of money we owe you	(you must be kidding!)
Amount of money we can diddle you out of	(priority)
What you had for breakfast	(Egg and Bacon)
How many games you have pirated in the last 2 years	(Lots)
• etc. etc.	

Keeping with the faith, J.A.C.K.I.E is a Commodore machine BUT it aint a 64, as we now use that as a reserve cooker (the Power Supply). It is one of those IBM think-a-likes, with a hard disk drive (ie you dont fold them when posting them like you do with floppies). Poor old J.A.C.K.I.E has a problem (dont we all), it has TOO much memory and an empty head, therefore I have devised a plan to cure it, but I need

< < < YOUR HELP > > > .

The idea is this, we use J's spare memory and disk space to share information and messages between expert users (like what you are..get it), the sort of info we share I dont care too much as long as its semi-decent and doesnt break too many laws. But the key factor is << YOU >>, yes you sonny (or lassie). What we need from you are:--

Messages	(meet someone interesting)
Adverts	(sell or buy anything)
Swops	(swop your <i>original</i> games (HA! HA!))
Cheats	(We have the technology)
etc	

### Membership details.

This newsletter is going to all addresses that I have got here, even those people whose membership has lapsed. This means that it is possible that your membership has expired now. I am still wading through all the old correspondence and trying to get up to date with how long you are a member for etc so I cannot tell you yet if your membership has expired. If you think your membership may have expired please renew now. If when I get the records up to date then it turns out that you already had some membership left then no problem, I will carry the money forward. The reason I ask this is that the next newsletter is going to be 48 pages long. This newsletter is going out soon so I need to know how many to get printed. I therefore cannot wait until I send letters to all those members whose membership has lapsed and wait for their replies. This newsletter will only go to those members on my list at that time. What I am aiming to achieve is a 48 page newsletter 6 times per year with an annual membership of #9. The cost of each newsletter will therefore be #1.50. This means that I will take how much money you have paid previously to the user group, deduct and amount based on the value of newsletters already sent to you, then the amount left (if any) will go towards next newsletters etc. This means that if you pay too much or too little etc I can cope with it. It also simplifies membership dates etc. Eg if you pay #9 then this is recorded then each issue we deduct #1.50 until it runs out, simple eh! The previous newsletters of the group were of such poor quality that I will not deduct #1.50 per issue, but a lot less.



## METHODS OF PAYMENT

If you wish to pay us any money (Please Please!!) there are various ways you can do this.

- By Cheque made payable to Expert User Group
- If total value is less than #7.00 then you pay by stamps, each stamp value between 13p and 50p please...
- By standing order, see the form enclosed or ask for details
- By Transcash at the post office. If you don't have a Giro Bank account then the post office will make an additional charge for this facility..
- By postal order made payable to the Expert User Group
- By cash, but please be careful how you send it.

If you pay too much for any item then the amount extra will be credited to you so you will not lose it. So for example if you want to order something at say #2.95, you might wish to round it up to #5.00, and use the #2.05 later.

### Our account.

The group account is called Expert User Group and is a Giro account number 63 144 0909 (sorting code 72 06 06).

## Next Issue.

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*What we expect will be in next issue of Expertise.*

---

*The first 48 page issue!*

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- Cor! Wars instructions.
- More Cheats.
- Machine code course.
- Competition.
- Plus lots more.

## Blank Operating system

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*We are trying to sell you a blank Expert O/S*

---

Are we mad? Do we really expect you to send us spondolicks for a blank operating system for your Expert cartridge?? Well some of you yes, because we have managed to get yet another special system for user group members. This is a version of the expert code which has been stripped of most of the code, so there's lots of room for you to add in your ideas. Along with this disk are detailed instructions how the code routines work and how to call them so that now you really can get to grips with the inside of your expert. There are several versions on disk all with different abilities so one should suit your needs. price #2.95 on disk. Remember and profits from sale of these disks go into group funds to increase the quality of service we can offer you.